

AJ

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-097375

(43)Date of publication of application : 02.04.2002

---

(51)Int.Cl. C08L101/00  
B29C 45/00  
C08J 5/00  
C08K 7/06  
H01M 8/02  
// B29K 83:00  
B29K105:12  
B29L 31:00

---

(21)Application number : 2000-289624

(71)Applicant : TORAY IND INC

(22)Date of filing : 22.09.2000

(72)Inventor : OKITA SHIGERU  
SUZUKI ATSUSHI

---

(54) THERMOPLASTIC RESIN COMPOSITION AND MOLDING

## (57)Abstract:

PROBLEM TO BE SOLVED: To obtain a thermoplastic resin composition having excellent electroconductivity, gas barrier properties, strength, corrosion resistance and moldability, suitable for a separator for a fuel cell.

SOLUTION: This thermoplastic resin composition is obtained by compounding a thermoplastic resin with a carbon fiber and a carbon nanotube.

---

## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

**\* NOTICES \***

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.\*\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

---

**CLAIMS**

---

[Claim(s)]

[Claim 1] The thermoplastics constituent containing a carbon fiber and a carbon nanotube.

[Claim 2] The thermoplastics constituent according to claim 1 whose loadings of 10 - 70 % of the weight and a carbon nanotube the loadings of a carbon fiber are 0.1 - 15 % of the weight.

[Claim 3] The thermoplastics constituent according to claim 1 or 2 the number mean fiber length (L) of a carbon fiber and whose ratio (L/d) with the diameter of fiber (d) are 10-10,000.

[Claim 4] The thermoplastics constituent according to claim 1 to 3 which is more than a kind chosen from the group which thermoplastics becomes from polyolefine, a polyamide, polyacetal, non-liquid crystal polyester, polyphenylene oxide, a polycarbonate, a polyphenylene sulfide, liquid crystal polyester, a polyether ketone, a polyether ether ketone, polysulfone, polyether sulphone, polyether imide, and these blend objects.

[Claim 5] The thermoplastics constituent according to claim 1 to 3 whose thermoplastics is a polyphenylene sulfide or liquid crystal polyester.

[Claim 6] The thermoplastics constituent according to claim 1 to 3 whose thermoplastics is a polyphenylene sulfide.

[Claim 7] Mold goods which fabricate a thermoplastics constituent according to claim 1 to 6, and are obtained.

[Claim 8] Mold goods according to claim 7 the number mean fiber length (L) of the carbon fiber in mold goods and whose ratio (L/d) with the diameter of fiber (d) are 5-5,000.

[Claim 9] The separator for fuel cells which fabricates a thermoplastics constituent according to claim 1 to 6, and is obtained.

[Claim 10] The separator for fuel cells according to claim 9 the number mean fiber length (L) of the carbon fiber in mold goods and whose ratio (L/d) with the diameter of fiber (d) are 5-5,000.

---

[Translation done.]

---